

Preliminary amendment
Application No. 10/541,822
Attorney Docket No. 052800

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions of claims in the application.

1-5. (Canceled)

6. (Currently amended) [[A]] An isolated or purified protein comprising the amino acid sequence represented by SEQ ID NO:2 and having L-rhamnose isomerase activity.

7. (Currently amended) [[A]] An isolated or purified protein comprising an amino acid sequence in which one or several amino acids have been deleted, replaced, or added in the amino acid sequence represented by SEQ ID NO:2 encoded by a DNA sequence that hybridizes with the nucleotide sequence of SEQ ID NO:1 at stringency conditions comprising a wash with a buffer containing 0.1x SSC and 0.1% SDS at 65°C and having an L-rhamnose isomerase activity.

8. (Currently amended) The protein according to Claim 6 or 7, wherein the L-rhamnose isomerase activity is specified by the following physicochemical properties:

(i) an action

which catalyzes an isomerization reaction represented by any of the bold black lines in Fig. 7, Fig. 8 and Fig. 9;

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[[(ro)]] (ii) an active pH and an optimal pH

in which the active pH ranges from 7.0 to 10.0 and the optimal pH is 9.0;

[[(ha)]] (iii) pH stability

in which it is stable within the pH range of 6.0 to 11.0 in the case where it is kept at 4°C for 1 hour at various pH values;

[[(ni)]] (iv) an active temperature and an optimal temperature

in which the active temperature ranges from 40 to 65°C and the optimal temperature is 60°C;

[[(ho)]] (v) a temperature stability

in which it is stable at 40°C for 10 minutes and ~~remains at 90% or more retains at least 90% activity even at 50°C for 10 minutes;~~

[[(hc)]] (vi) an effect of a chelating agent

in which its activity is ~~hardly inhibited even if it coexists with EDTA or EGTA, which is a chelating agent, during the measurement of its activity not substantially inhibited by EDTA or EGTA;~~

[[(to)]] (vii) an effect of a metal ion

in which about 30% of the activity is inhibited by 1 mM cobalt ion; and

[[(chi)]] (viii) a molecular weight by the SDS-PAGE method

which is about 43,000.

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9-16. (Canceled)